

Notice of Allowability

Application No.

10/625,950

Examiner

Tuan N. Nguyen

Applicant(s)

MCDONALD, MARK E.

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 06/15/2006.
2. ☒ The allowed claim(s) is/are 1,2,7-9 and 15-18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>9/1/2006</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Response to Amendment

1. In responding to applicant's response filed 08/07/2006, claims 1, 8, 17 have been amended, claims 5-6, 13-14, and 19-20 are canceled.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below, to the amended claims 1, 3, 4, 8, 10, 11, 12, 17, 21, 22 should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview on September 1, 2006 with Mr. Kevin A. Reif (Attorney for Applicant, Reg. No. 36,381).

Claim 1:

1. (currently amended). A laser optical coating, comprising:
at least one anti-reflective layer having an admittance between that of a gain media and an adjacent media;
wherein said gain media comprises InGaAsP;
an absentee layer having an index of refraction greater than said gain media and having a thickness corresponding to a number of half waves,
wherein the number of half waves is 1-7;
wherein said anti-reflective layer comprises:

Art Unit: 2828

a first layer comprising Ta₂O₅; a second layer comprising SiO₂; and said absentee layer comprises Si.

Claim 8:

8. (currently amended). A method to mitigate reflection, comprising:
applying an absentee layer having a thickness corresponding to a number of half wave thickness to an optical media, said absentee layer having an index of refraction greater than that of said optical media,

wherein the number of half waves thickness is 1-7; and

applying an antireflective layer comprising at least one material having an admittance between that of said optical media and an adjacent media;

wherein optical media comprises a laser gain media comprises InGaAsP and said absentee layer comprises Si; and

wherein applying said anti-reflective layer comprises:

applying a first layer comprising Ta₂O₅; applying a second layer comprising SiO₂.

Claim 17:

17. (currently amended). A laser comprising:
a tunable gain media to output a range of wavelengths around a center wavelength λ ;

Art Unit: 2828

at least one anti-reflective layer having an admittance between that of said gain media and an adjacent media;

an absentee layer having an index of refraction greater than that of said gain media and, said absentee layer having a thickness d determined as

$$d = m \lambda / 2n$$

where d is the thickness of said absentee layer, λ is the center wavelength to be output by the gain media, n is the refractive index of the absentee layer, and m is an integer number of half-waves selected to optimize performance of said antireflective layer over said range of wavelengths,

wherein the integer number of half waves is 1-7;

wherein said gain media comprises InGaAsP;

wherein said antireflective layer comprises: a first layer comprising Ta₂O₅;

a second layer comprising SiO₂; and said absentee layer comprises Si.

Claims 3-4: Claims 3-4 has been canceled.

Claims 10-12: Claims 10-12 has been canceled.

Claims 21-22: Claims 21-22 has been canceled.

Allowable Subject Matter

3. The following is an examiner's statement of reasons for allowance, with respect to claims 1, 8, 17, the references of the record fail to teach or suggest a laser, its coating, and method of mitigate reflection thereof comprising:

Claims 1, 8, 17 :

Where at least one anti-reflective layer having an admittance between that of *a gain media comprises of InGaAsP* and an adjacent media, with *an absentee layer having an index of refraction greater than said gain media* and having a thickness corresponding to 1-7 half waves, *wherein said anti-reflective layer comprises: a first layer Ta₂O₅ and a second layer comprising SiO₂; and said absentee layer comprises Si.*

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F.

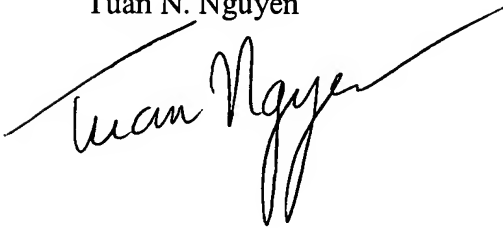
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harvey Minsun can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be

Art Unit: 2828

obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan N. Nguyen

A handwritten signature in black ink, appearing to read 'Tuan Nguyen', with a long horizontal stroke extending to the left.A handwritten signature in black ink, appearing to read 'Armando Rodriguez', with a long horizontal stroke extending to the right.
ARMANDO RODRIGUEZ
PRIMARY EXAMINER